UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

March 14, 2005

Reply to
Attn Of: OEA-095

MEMORANDUM

SUBJECT: Comments on the "Draft Preliminary Evaluation of the Implications of Airborne Asbestos Exposure Concentrations Observed During Simulation of a Selected Set of Common, Outdoor Residential Activities Conducted at the North Ridge Estates Site, Klamath Falls, Oregon"

FROM: Julie Wroble
EPA Region 10 Toxicologist, Risk Evaluation Unit

Jed Januch
EPA Region10 Investigator, Investigation and Engineering Unit

TO: Dr. D. Wayne Berman
President, Aeolus, Inc.

Attached please find EPA's initial comments on the above-referenced document. This document suggests that residents at North Ridge Estates should be cautious and avoid activitieis associated with the potential for close contact with disturbed soil. This finding is supported to some extent by site data and conservative risk analyses. EPA believes the analysis described in the report is technically sound. If you have any questions or concerns about these comments, please call Julie Wroble at 206/553-1079 or Jed Januch at 360/871-8731.

The language in the executive summary is less clear than some of the language in the subsequent sections. Some of the findings presented in the executive summary are unclear without the backup information to support them. The size and scope of the executive summary should be limited.

This document primarily relates to an evaluation of data collected during the simulated activities done in North Ridge Estates (NRE) in July of 2004. There is no specific discussion of the glove box procedures and no mention of the results of previous studies in which it has been applied. The qualitative data we derive from using the glove box is being compared against the quantitative data that

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results from the Berman elutriator. This is not an appropriate comparison due to the many differences between the two procedures.

Detailed Comments:

Title of the report: Delete the word “preliminary” from the title of this document. What makes this evaluation preliminary? Is further analysis of this data expected?

Editorial Comment: In the printed version of the document, the tables and figure were not aligned properly on the page. Please check the print format for all tables and figures.

Throughout the text, the EPA-led, activity-based sampling study that was completed in July 2004 is referred to as a “special study” or the “EPA special study.” Please refer to this sampling exercise as the “activity-based sampling study” or the “July 2004 field event.” Similarly, referring to the individuals conducting the study as “contractors” instead of “workers” is confusing.

Scientific notation: Several discrepancies were found in the text between decimal values and the corresponding scientific notation – see Section 7.1.

Executive Summary, 1st paragraph: Add the citation “(Berman 2004)” after “Preliminary Soil Report.”

Executive Summary, EPA Study Design, 1st paragraph: The phrase “bound exposures” should be changed because the intent was not to bound exposures but rather to give a better understanding of potential exposures for a variety of commonly-practiced activities at North Ridge Estates.

Executive Summary, EPA Study Design, 3rd paragraph: The phrase “would be greater” may be a bit strong; rather, the intent of the study was to determine air concentrations for various activities under favorable meterological conditions. Add the phrase “since the surficial removal that occurred during 2003” after “the highest levels of ACM contamination visually observed anywhere at the North Ridge Estates site.”

Executive Summary, Interpretation of EPA Study Results, 1st paragraph: The language in this paragraph is confusing. Do the risks represent “upper bound” for all possible exposures that are ongoing at this site? Do the risks represent past exposures that residents have already experienced? This report should state very clearly what types of exposures these risks are predictive of and which types of exposures are not addressed. Also, the report should clearly describe the data upon which conclusions are based.

Executive Summary, Amphibole-related Risks, second bullet: The statement "...the QC checks conducted on the EPA study data are not sufficient to eliminate concerns that some of the data may have been contaminated...." should be rephrased. The intention of this statement may be that some of the QC samples may have been contaminated and therefore the data may be questioned. "Contaminated data" implies something else entirely.

Executive Summary, Conclusions and Recommendations: The first sentence contains a very strong recommendation warning against contact with site soil. This message is somewhat different than what was communicated at the public meeting last October, which warned against contact with ACM and areas with high levels of ACM in soil.

Section 2, page 7, 2nd paragraph: Delete "that would bound exposures" from the second sentence.

Section 3.3, page 11, 1st paragraph after bullets: Add "cancer" before "risks" in the second sentence. Add the following "(Note that shorter structures may contribute to noncancer health effects [Dodson et al, 2003].)" before the last sentence. (Dodson, R.F., Atkinson, M.A., and Levin, J.L. 2003. Asbestos fiber length as related to potential pathogenicity: a critical review, Am. J. Ind. Med. 44: 291-297.)

Section 4, page 12, first paragraph: Add "(Note that these locations may not have been as heavily contaminated by ACM as some of the occupied residences were prior to the 2003 surficial cleanup.)" after the PBS reference.

Section 4, page 13, first full paragraph on this page: Add "from within each of the nine grids" after "A separate set of random locations" in the first sentence.

Section 5.1, page 13: Add "(Note that all structures identified in air were chrysotile.)" before the last sentence in this paragraph. This relates to footnote e in Table 7.

Section 5.2, page 15: Add "in air" after "Dust concentrations" in the first sentence.

Section 5.4.1.1, page 17, last paragraph: Dr. Berman suggests that analysis of blanks during EPA studies was not sufficient to eliminate concerns that some of the asbestos observed was due to filter or lab contamination. A blank filter was analyzed from the lot of filters used for the glove box samples. No asbestos was detected, although only 10 grids were observed by LabCor. This is their normal procedure for AHERA samples. The ISO method 10312 is rather vague on exactly the number of grids to be counted for a blank sample. This is where Dr. Berman raises a legitimate concern. To address this concern, EPA reanalyzed both the QC filter (140 grids counted) and the background filter (108 grids counted), sample numbers 03524003 and 04084109 respectively, to achieve the

same analytical sensitivity as that achieved for sample 0408111. The reanalysis of these samples identified no asbestos on either filter.

Section 5.4.1.1, page 19, first full paragraph: The glove box is not mentioned in this report prior to this page. Some introduction as to the purpose of and use of glove box samples is needed prior to this.

Dr. Berman points out that three long amphibole structures were detected in a sample prepared by the glove box procedure while a duplicate split of the soil prepared by the elutriator method showed detection of only three short chrysotile structures. He states that "... given the proven reliability of the elutriator method (over this study and studies in general), the source of the amphibole structures observed in the glove box sample is open to question." EPA's response to this is that the specimen on soil in question is not homogenous. The techniques used to prepare and collect the samples (glove box versus elutriator) for analysis were quite different in several respects. Last, the result of analysis for bulk samples collected by the Oregon Department of Environmental Quality (ODEQ) revealed that amosite asbestos, the amphibole identified in sample 0408111, was a component of some of the asbestos containing material (ACM) fragments found on this site.

Section 5.4.1.2, page 20, first full paragraph: Change "Method 30132" to "Method 10312."

Section 5.4.1.2, page 21, second full paragraph. In the second sentence, change "five" to "three."

Section 6, page 25: Add the second sentence in the second paragraph to the end of the first paragraph for clarify. At the end of the third paragraph, add a reference to Berman 2004 – the soil report.

Section 6, page 26: Add an explanation of why you think these exposures are "upper-bound estimates of any actual risks" given that these activities may occur in addition to other activities that may result in exposures to asbestos.

Section 7.1, page 30, first full paragraph: How was the model adjusted based on information gathered during the activity-based sampling activity? In the third full paragraph on this page, note that only soil components were considered in the modeling performed here. While this may be appropriate for shorter term exposures, it may not be protective of long-term exposures as ACM may weather and release additional fibers.

Section 7.1, page 31, first paragraph: The conclusions on this page should be interpreted with caution because the model was refined using soil concentrations only. This may be appropriate if the information is used to make decisions in the near-term, but may not be protective of long-term exposures. Also, exposures

that have already occurred at the site have not be quantitatively evaluated in any of the risk assessment documents completed to date.

Section 7.2, page 33, first full paragraph: Again, how was the model adjusted based on field measurements?

Section 7.2, page 33, second full paragraph: Add the word “speed” to the end of the first sentence. Also, what is the source of the annual average wind speed data?

Footnote 14, bottom of page 33: This footnote is confusing. Please explain why such a great width is needed in the modeling.

Section 7.3.1, page 37, first paragraph. The conclusions that risks likely will be lower with additional data collection is true if the assumptions used in modeling completed to date are valid and if the material across the site is consistent with what has been found to date. However, note that using soil-only components underestimates the contribution of ACM to risk and may not be protective of long-term exposure as ACM weathers.

Section 7.3.1, page 37, second to last paragraph: Although hot, dry conditions do not persist throughout the year, these meteorological conditions are expected during the time of year when kids are likely to play outdoors. In the next paragraph, verify that humid/moist conditions occur for at least half the year. Please provide a reference for this data. Given the high desert climate in the site vicinity, humid conditions may occur infrequently.

Section 7.3.2, page 39, third full paragraph: In the five samples in which amphibole was detected, was steam pipe present on the properties? In general, do the parcels on which amphibole was identified contain steam pipe insulation?

Footnote 17, page 39: This footnote states “…there is currently no established procedure for quantitavely relating the results from the analyses of glove box samples to exposure or risk.” This is true. The glove box procedure is intended as a qualitative sampling method. It is not quantitative and it is not appropriate to draw conclusions about exposure or risk from samples derived from this procedure. What is appropriate is using glove box derived data as a quick and relatively inexpensive means to determine where more quantitative methods should be applied.

Section 7.3.2.1, page 40: Dr. Berman re-emphasizes the difference between the glove box derived results and those derived from the elutriator with regard to one sample containing amphibole. It may be valuable to discuss any similarity or difference in the amount of chrysotile observed in other split samples when prepared using the glove box and elutriator procedures.

Section 7.3.2.2, page 42: Dr. Berman again states the EPA data is contaminated. He should clearly state what he means even though EPA questions this conclusion. In the second bullet, in order to make a case that if EPA finds a small number of amosite fibers in the glove box sample it must find them in the elutriator sample implies that the specimen of soil that was tested was homogenous. It was not. The soil specimen is heterogenous and it is possible that a small fragment of ACM containing amosite may have made its way into the split tested in the glove box but not into the split tested with the elutriator. Given that fragments of ACM containing amosite were identified in bulk samples from this site collected by ODEQ it seems reasonable to at least mention this fact.

Section 8, page 43, first paragraph of section: Emphasis should be added to the second and third sentences in this paragraph because this conclusion represents a departure from earlier work conducted at this site. In the second paragraph in this section, EPA questions the value of collecting additional data to characterize risk. There would be a large expense associated with additional data collection. Perhaps the money would be better spend developing a remedy for addressing areas with known high levels of ACM in soils.

Table 9: For risks based on samples with no detected levels of fibers, shouldn't the risks be reported as less than the value, rather than as an absolute value? The risks for amosite presented in Table 9 are based on the UCL for zero structures, should such strong conclusions be based on nondetected results?

Table 10: Was ACM included in any of the soils evaluated in this table? Also, Should the sample location for EPA Simulation Air be MBK?

Appendix B, page 61: In the fifth paragraph, please provide a reference for the risk of dying of cancer as one in five. The phrase "worst-case" should be changed. It is possible that "worst-case" exposures that may have already occurred at this site have not been accounted for in this evaluation.